CALIBRATING HAND SPRAYERS & HIGH PRESSURE HAND GUNS

1/128 METHOD OF CALIBRATION

This is an easy method of calibration that involves very little math or formulas. It is based on the following principal: because 1 gallon = 128 ounces and the test area to be sprayed is $1/128^{th}$ of an acre, ounces collected = gallons per acre.

STEP 1. Measure out an area equal to $1/128^{th}$ of an acre. Approximately 340 ft^2 or an area 18.5 ft by 18.5 ft.

STEP 2. Measure the time it takes to spray the measured area. Repeat several times and take the average time. **Use straight water in sprayer – No Herbicide.** Maintain constant pressure in hand sprayer.

STEP 3. Spray into a container for the same amount of time it took to spray the measured area. Measure the water collected in ounces. The amount collected in ounces equals gallons applied per acre.

EXAMPLE: Hand Sprayer

STEP 1. Measure area. 18.5 ft by 18.5 ft = 340 ft^2

STEP 2. Time to spray 18.5 x 18.5 area = 51 seconds

STEP 3. Amount collected in container in 51 seconds = 40 ounces.
Therefore; 40 ounces = **40 gallons per acre**

Determining How Much Pesticide/Herbicide to Add to the Spray Mixture

For this example, the recommendation is to apply 1 quart of 2,4-D per acre.

The sprayer is applying 40 gallons per acre. Therefore, you will need to **add 1 quart of 2,4-D to each 40 gallons of water.** Your sprayer holds 1 gallon of spray mixture. So how much pesticide will you need to add to the gallon of water?

1 quart (32 ounces) divided by 40 gallons = 0.8 ounces 2,4-D per gallon of water

1 fluid ounce=2 tablespoons. Therefore; you will need approximately 2 tablespoons of 2,4-D per gallon of water.

1 fluid ounce also = 29.57 milliliters (ml). Therefore if measuring in ml; you would need 0.8 ounces times 29.57 ml per ounce = **24 ml per gallon of water.**

How much area will one gallon spray? There are 43,560 ft^2 per acre. If 40 gallons will spray one acre then one gallon will spray an area $1/40^{th}$ that size or 45,560 ft^2 divided by 40 = **1089 ft^2 or an area 33 ft. x 33 ft.**

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